storage system in a coordinated time synchronized fashion, (2) accumulating, at the executing host computers, data regarding performance of the mass storage system, in response to the requests sent by the host computers, and (3) presenting the accumulated data, in a graphical plot format, for enabling the visualization of trends in the performance of the mass storage system as a function of at least one selected parameter, in response to the host generated commands.

The Examiner rejected claim 1 as being obvious over Voigt in combination with Harrison and Burns. The Examiner contends that Voigt and Harrison disclose all the limitations of claim 1 except for sending commands to a mass storage system in a coordinated time synchronized fashion. The Examiner states that "Burns teaches coordinated time synchronization. (see col. 16, lines 37-44). " The Examiner also states that "it would have been obvious ... to further include the teachings of Burns because coordinated time synchronization would have allowed the skilled artisan to time stamp data to indicate when data was generated (see Burns, col. 16, lines 44-46)."

This rejection is respectfully traversed. None of the cited references discloses or suggests "executing at a plurality of said host computers a test request by sending commands to said mass storage system in a coordinated time synchronized fashion" as recited in claim 1.

Voigt does not disclose this step because it only has a single host computer connected to a data storage system. Voigt, therefore, does not disclose or suggest a plurality of said host computers executing a test request, much less by sending commands to said mass storage system in a coordinated time synchronized fashion.

Harrison also does not disclose this step because Harrison only discloses a method of recording data onto a disk drive, and is cited by the Examiner only for disclosing the presence of a plurality of host computers connected to a controller. Harrison does not disclose or suggest a plurality of host computers executing a test request, much less by sending commands to a mass storage system in a coordinated time synchronized fashion.

The Examiner relies on Burns for purportedly disclosing executing at a plurality of said host computers a test request by sending commands to said mass storage system in a coordinated

time synchronized fashion. Burns discloses a process control network having a plurality of field devices (such as temperature, pressure and flow rate sensors) that send information to program logic controllers and host devices (see Burns, Fig. 1 and col. 7, lines 62-67). Like Voigt and Harrison, Burns also does not disclose or in any way suggest a plurality of host devices executing a test request, much less by sending commands in a coordinated time synchronized fashion.

The Examiner cites to col. 16, lines 37-46 of Burns for disclosing "coordinated time synchronization":

> To assure proper communication activities over the bus 34, each LAS periodically sends a time distribution message to all of the field devices connected to a segment of the bus 34, which enables the receiving devices to adjust their local application time to be in synchronization with one another. Between these synchronization messages, clock time is independently maintained in each device based on its own internal clock. Clock synchronization allows the field devices to time stamp data throughout the Fieldbus network to indicate, for example, when data was generated.

This paragraph of Burns only discloses that the field devices have internal clocks that must be time synchronized so that so that their data can be accurately time-stamped when generated. Burns does not disclose or in any way suggest that any commands are *sent to* the field devices in a coordinated time synchronized fashion. Burns is only concerned with synchronizing the clocks of the field devices so that their time-stamps are accurate. Burns is not concerned with and has no reason for sending commands to the field devices in a coordinated time synchronized fashion.

The present invention is generally directed to a method of presenting system performance to a user in a mass storage system having multiple disk drive storage elements controlled by a disk drive controller. During operation, the disk drive controller receives commands and data from and returns data to multiple host computers. To determine how well the system is performing, the host computers can be operated in a coordinated time synchronized fashion to test the controller and the disk drive elements. Accordingly, potential problems that can create bottlenecks on communication lines connected from the controller to either the disk drive elements or the hosts can be identified.

The performance of a large storage system is particularly difficult to measure since there are multiple host computers, which connect to the disk drive controllers, and which can operate at the same time in serial or parallel fashion. As a result, a plurality disk drive elements, usually arranged in a disk drive array, operating in either an independent fashion, a RAID configuration, or a mirrored configuration, e.g., can have a significant yet undetectable bandwidth or operational problems that cannot be addressed or discovered when commands are sent only from a single host computer. The present application addresses this problem by executing at a plurality of the host computers a test request by sending commands to the mass storage system in a coordinated time synchronized fashion, and accumulating, at the executing host computers, data regarding performance of the mass storage system, in response to the requests sent by the host computers.

Burns does not relate to testing of mass storage systems, nor does it recognize the problems of bottlenecking addressed by the invention. Burns, accordingly, does not disclose or suggest a plurality of host devices executing a test request, much less by sending commands to network in a coordinated time synchronized fashion.

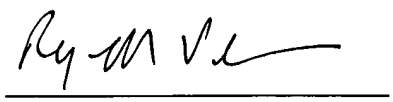
Therefore, the rejection of claim 1 under 35 U.S.C. § 103(a) based on the combination of the Voigt, Harrison and Burns references is improper because none of these references discloses or suggests the claimed step of "executing at a plurality of said host computers a test request by sending commands to said mass storage system in a coordinated time synchronized fashion" as recited in claim 1.

Claim 1 is thus allowable over the Voigt, Harrison and Burns references. The other cited reference, Oshelski, does not cure the defects of Voigt, Harrison and Burns. Claims 2-11 are dependent on Claim 1 and are, therefore, also allowable over the cited references.

Claims 1-11 are pending in the present application. As the application is now in condition for allowance, issuance of a Notice of Allowance is requested.

The Commissioner is hereby authorized to charge any fee deficiency associated with this submission, or credit any overpayment to Deposit Account No. 08-0219.

Respectfully submitted,



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